



Claims

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1. Apparatus for cutting or welding tubular workpieces or the like, having

a) a cutting or welding torch;

b) a guiding device for the cutting or welding torch, which device is controllable in such a way that the cutting or welding torch follows a predetermined line;

characterised in that

the guiding device comprises:

10 c) a stand-like portal (7; 107), which for its part has:

ca) a through opening (8; 108), into which a workpiece (3; 103) can be guided in the axial direction;

15 cb) a rotary part (14; 114), which is rotatable about the axis of the through opening (8; 108) in a motor-driven manner;

cc) a holding arm (16; 116), which at its free end carries the cutting or welding torch (17; 117) and with its other end is fixed in such a way to the rotary part (14; 114) and configured in such a way that the cutting or welding torch (17; 117) can be adjusted radially in relation to the axis of the through opening (8; 108) of the portal (7; 107) and brought into different angular positions in relation to the surface of the workpiece (3; 103);

d) a device (20; 116), by which a relative movement between the workpiece (3; 103) and the cutting or welding torch (17; 117) in the axial direction of the through opening (8; 108) can be brought about.

15 2. Apparatus according to Claim 1, characterised in that the rotary part (14; 114) rotatable about the through opening (8; 108) is a ring or a ring segment which is mounted in a guide (13; 113) arranged on one end face of the portal (7; 107).

20 3. Apparatus according to Claim 1 or 2, characterised in that the holding arm (16) comprises three sections (16a, 16b, 16c), of which the first (16a) extends substantially radially and is mounted so as to be displaceable in this direction by motor, of which the second section (16b) is fixed to the first section (16a) so as to be rotatable by motor about

an axis which runs in the azimuthal direction in relation to the through opening (8) of the portal (7), and of which the third section (16c) is fixed to the second section (16b) so as to be 5 rotatable by motor about an axis which runs parallel to the axis of the through opening (8).

4. Apparatus according to one of Claims 1 to 3, characterised in that the device (20) for producing the relative movement is designed in such a way that 10 it can adjust the workpiece (2) in the direction of the axis of the through opening (8) of the portal (7).
5. Apparatus according to Claim 4, characterised in that the device (20) for producing the relative 15 movement comprises a carry-along slide (20), which is movable parallel to the axis of the through opening (8) and can be brought into carry-along connection with the workpiece (3).
6. Apparatus according to one of Claims 1 to 3, characterised in that the device (116) for producing 20 the relative movement is designed in such a way that it can adjust the cutting or welding torch (117) in the direction of the axis of the through opening (108) of the portal (107).

7. Apparatus according to Claim 6, characterised in that the device for producing the relative movement is formed by the holding arm (116), which for this purpose comprises five interconnected sections (116a to 116e),

- 5 a) the first section (116a) being fixed to the rotary part (114);
- 10 b) the second section (116b) being fixed to the first section (116a) so as to be rotatable by motor about an axis which runs in the azimuthal direction in relation to the through opening (108) of the portal (107);
- 15 c) the third section (116c) being fixed to the second section (116b) so as to be rotatable by motor about an axis which likewise runs in the azimuthal direction in relation to the through opening (108) of the portal (107);
- 20 d) the fourth section (116d) being fixed to the third section (116c) so as to be rotatable by motor about the axis of the third section (116c);
- e) the fifth section (116e), which carries the cutting or welding torch (117), being fixed to the fourth section (116d) so as to be rotatable

about an axis which runs perpendicular to the axis of the fourth section (116d).

8. Apparatus according to Claim 6 when referring back to Claim 3, characterised in that the device for producing the relative movement comprises a slide which is movable by motor parallel to the axis of the through opening and is fixed to the rotary part and to which the holding arm is attached.
9. Apparatus according to one of the preceding claims, characterised in that it comprises, on at least one side of the portal (7), stands (2) which carry a plurality of rollers (5) and on which the workpiece (3) can be laid.
10. Apparatus according to one of the preceding claims, characterised in that a guide (9 to 12) is provided for the workpiece (3) in the through opening (8) of the portal (7).
11. Apparatus according to Claim 10, characterised in that the guide comprises a plurality of guide rollers (9 to 12) which can be laid against the surface of the workpiece (3).
12. Apparatus according to Claim 11, characterised in that the guide rollers can be driven by motor.

13. Apparatus according to one of the preceding claims, characterised in that the position of the through opening (8; 108) is adjustable in the vertical and/or horizontal direction.